Fig. 1

Develop Features and Groupings — 1

Develop and test scoring functions for features — 2

Develop and test user profiles — 4

Develop and test text snippets for features — 3

Develop and test snippets for user profiles — 5

Deploy product guide using Synthesizer's run-time engine — 6

Fig. 2

Developer — 20

End User — 21

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Web Browser / Server

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26 34 32 27

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Synthesizer

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Authoring Interface

Text Generator

Ranking Engine

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User Profile DB

User Profile Snippets

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Feature DB

Scoring Functions

Feature Snippets

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Product DB

Feature Values

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User Preferences

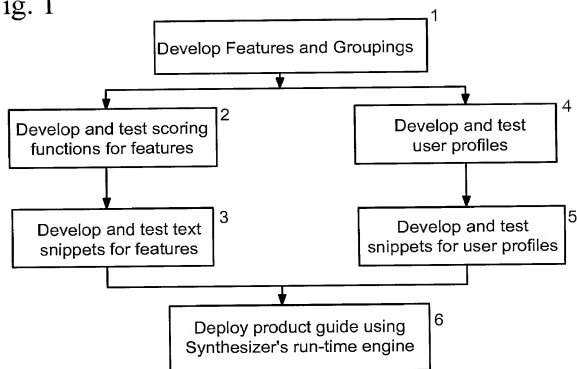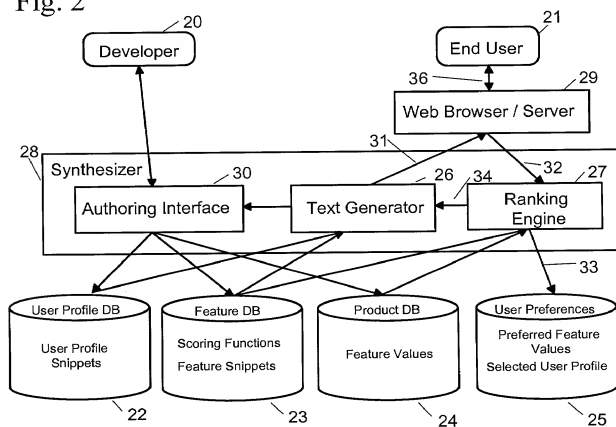Preferred Feature Values

Selected User Profile

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Fig. 3a

```
procedure SummarizeTopProduct
      let u = current user profile
      let p = product with top ranking (according to u)
      output "The top overall pick is"
(or randomly-selected synonymous generic phrase)
      output brand(p), model(p)
      output "."
      do DescribeMostImportantAndTopRatedFeatures(p,u)
end procedure

procedure DescribeMostImportantAndTopRatedFeatures( Product p,
      UserProfile u )
      let topRatedAndMostImportantFeatures =
            list of category features cf such that
                  IsTopRatedFeature(cf,p) = true and
                  IsMostImportantFeature(cf,u) = true
      let topRatedButNotImportantFeatures =
            list of category features cf such that
                  IsTopRatedFeature(cf,p) = true but
                  IsMostImportantFeature(cf,u) = false
      let importantButNotTopRatedFeatures =
            list of category features cf such that
                  IsTopRatedFeature(cf,p) = false but
                  IsMostImportantFeature(cf,u) = true
if topRatedAndMostImportantFeatures is not empty
      output "It has"
      for each cf in topRatedAndMostImportantFeatures, output
            getSuperlativeSnippet(cf)
      output ", which"
      output getAssertImportantSnippet(u)
      output "."
      end if
if importantButNotTopRatedFeatures is not empty
      output "It has lower ratings in"
      for each cf in importantButNotTopRatedFeatures, output
            getFeatureLabel(cf)
      output ", which"
      output getAssertAlsoImportantSnippet(u)
      output "."
      end if
if topRatedButNotImportantFeatures is not empty
      output ", but has high scores in"
      for each cf in topRatedButNotImportantFeatures, output
            getFeatureLabel(cf)
      output "."
      end if
end procedure
```

Fig. 3b

```
function IsTopRatedFeature( CategoryFeature cf, Product p )
     if p's ranking on cf is in top 2 rankings for p,
          return true
     else return false
end function

function IsMostImportantFeature( CategoryFeature cf, User u )
     if u's weighting of cf is in top 2 weightings for u,
          return true
     else return false
end function
```